METHOD OF REDUCING PROCESS PLASMA DAMAGE USING OPTICAL SPECTROSCOPY

ABSTRACT OF THE DISCLOSURE

Optical emission spectra from a test wafer during a plasma process are measured using a spectrometer. The plasma charging voltage retained by (detected by) the test wafer is measured after the process step is completed. The emission spectra are correlated with the plasma charging voltage to identify the species contributing to the plasma charging voltage. The optical emission spectra are monitored in real time to optimize the plasma process to prevent plasma charging damage. The optical emission spectra are also monitored to control the plasma process drift.